VÄIKELAEVAD. ROOLI, KÄIGUVAHETUSE JA SEGUKLAPI ELEKTRILISED/ELEKTROONILISED JUHTIMISSÜSTEEMID

Small craft - Electrical/electronic control systems for steering, shift and throttle (ISO 25197:2020)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 25197:2020 sisaldab Euroopa standardi EN ISO 25197:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 25197:2020 consists of the English text of the European standard EN ISO 25197:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.04.2020.	Date of Availability of the European standard is 22.04.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 47.080

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 25197

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Supersedes EN ISO 25197:2018

English Version

Small craft - Electrical/electronic control systems for steering, shift and throttle (ISO 25197:2020)

Petits navires - Systèmes électriques/électroniques pour le contrôle de la direction, de l'inverseur et des gaz (ISO 25197:2020)

Kleine Wasserfahrzeuge - Elektrische/elektronische Regelungssysteme für Steuerung, Schaltung und Antrieb (ISO 25197:2020)

This European Standard was approved by CEN on 7 March 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 25197:2020 E

European foreword

This document (EN ISO 25197:2020) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with CCMC.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 25197:2018.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 25197:2020 has been approved by CEN as EN ISO 25197:2020 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of Directive 2013/53/EU aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/542/C(2015) 8736 final to provide one voluntary means of conforming to essential requirements of Directive 2013/53/EU.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2013/53/EU

Essential Requirements of Directive 2013/53/EU	Clause(s)/sub-clause(s)of this EN	Remarks/Notes
Annex I, sub clause 2.5 Owner's manual	4.7, 4.11, 12	These clauses specify the information to be included in the owner's manual.
Annex I, 5.4 Steering system 5.4.1 General	10.2	In respect of transmission of steering loads in all foreseeable conditions.
Annex I, 5.4 Steering system 5.4.2 Emergency arrangements	9.1.4	In respect of single engine non-sailing craft with remote rudder steering only.
Annex II (3) - Steering wheels, steering mechanisms and cable assemblies	10.2	In respect of the transmission of steering loads in for electric/electronic steering systems supplied as components only.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 188, *Small craft.*

This second edition cancels and replaces the first edition (ISO 25197:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the terms and definitions have been revised to give coherency with other standard definitions; new terms, such as input device and output device, have been introduced;

— the figures have been revised to clarify the concepts illustrated;

— 7.2, on portable helms, has been revised to make it coherent when an electric propulsion motor is used;

— 9.1 has been revised to include the fail-safe mode and the alarm policy;

— the main change is in 10.1: the request to use three different samples for all tests (except for EMC test) has been deleted because it would have involved a great expense without having significant improvement; only one sample is used for all tests described on the subsequent subclauses;

— the durability test on joystick described in 10.4 has been made an operational test;

— Table 1 in 10.5.1 has been updated introducing the column “immersion” to handle test on immerged components;

— in 10.5.2, all ways to conduct the salt mist test, based on different standards, have been homogenized;

— in 10.7, the shock test has been revised;

— in 10.8, the free fall test has become the drop test with the addiction of the UV test;

— the UV test, described in 10.9, has been clarified;

— in 10.10, there are many changes due to the revision of IEC 60533 and the forthcoming release of IEC 62742; to avoid any direct link to those standards, all tests previously required by IEC 60533 have been embedded and all standards cited have been added to the normative reference list.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Small craft — Electrical/electronic control systems for steering, shift and throttle

1 Scope

This document establishes the requirements for the design, construction and testing of electrical/electronic steering, shift and throttle systems and dynamic positioning control systems, or combinations thereof, on small craft of up to 24 m length of hull.

This document does not apply to electric trolling motors and autopilot systems on sailing craft.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4892-1:2016, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance*

ISO 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ISO 4892-3:2016, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*

ISO 4892-4:2013, *Plastics — Methods of exposure to laboratory light sources — Part 4: Open-flame carbon-arc lamps*

ISO 8846:1990, *Small craft — Electrical devices — Protection against ignition of surrounding flammable gases*

ISO 8848:1990, *Small craft — Remote steering systems*

ISO 10133:2012, *Small craft — Electrical systems — Extra-low-voltage d.c. installations*

ISO 10240:2004/Amd1:2015, *Small craft — Owner's manual*

ISO 10592:1994, *Small craft — Hydraulic steering systems*

ISO 11591:2019, *Small craft — Field of vision from the steering position*

ISO 13297:2014, *Small craft — Electrical systems — Alternating current installations*

ISO 16750-2:2012, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 2: Electrical loads*

ISO 16750-3:2012, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 3: Mechanical loads*

ISO 16750-4:2010, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 4: Climatic loads*

ASTM B117:2016, *Practice for operating salt spray (fog) apparatus*

IEC 60068-2-27:2008, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock*

IEC 60068-2-52:2017, *Environmental testing — Part 2-52: Tests — Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 60092-507:2014, *Electrical installations in ships — Part 507: Small vessels*

IEC 60945:2002, *Maritime navigation and radiocommunication equipment and systems — General requirements — Methods of testing and required test results*

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 2: Electrostatic discharge immunity test — Basic EMC publication*

IEC 61000-4-3:2006+Amd1:2007+Amd2:2010, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 3: Radiated, radio frequency, electromagnetic field immunity test*

IEC 61000-4-4:2012, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 4: Electrical fast transient/burst immunity test — Basic EMC publication*

IEC 61000-4-5:2014+Amd1:2017, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 5: Surge immunity test*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-11:2004+Amd1:2017, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61000-4-16:2015, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 16: Test for immunity to conducted, common mode disturbance in the frequency range 0 Hz to 150 KHz*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
electrical steering system
electronic steering system
all components, including CPU (central processing unit) and cable harnesses, from the manual steering *input device* (3.11) up to and including the device [*actuator* (3.22) or electrical motor] regulating the rudder or propulsion unit steering angle

Note 1 to entry: It includes the *joystick* (3.15) and components, i.e. GPS antennas for dynamic positioning, if installed.

3.2
dynamic-positioning system
computer-controlled system to automatically maintain a craft's position and heading by using the craft's own propulsion systems with or without the assistance of bow or stern thrusters

3.3
electrical shift and throttle system
electronic shift and throttle system
all components, including CPU (central processing unit) and cable harnesses, from the shift and throttle *input device* (3.11) up to and including the device controlling the shift and speed of engines